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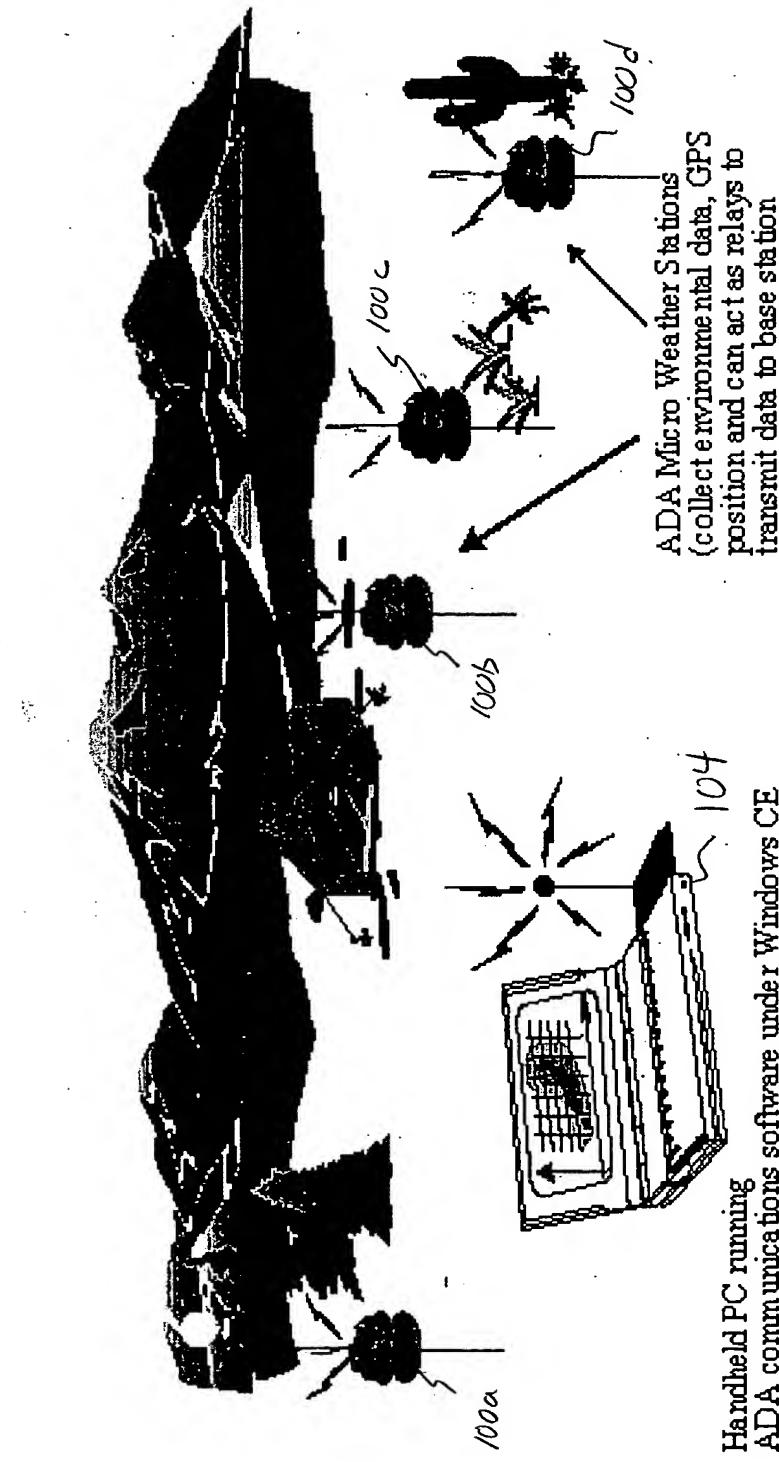
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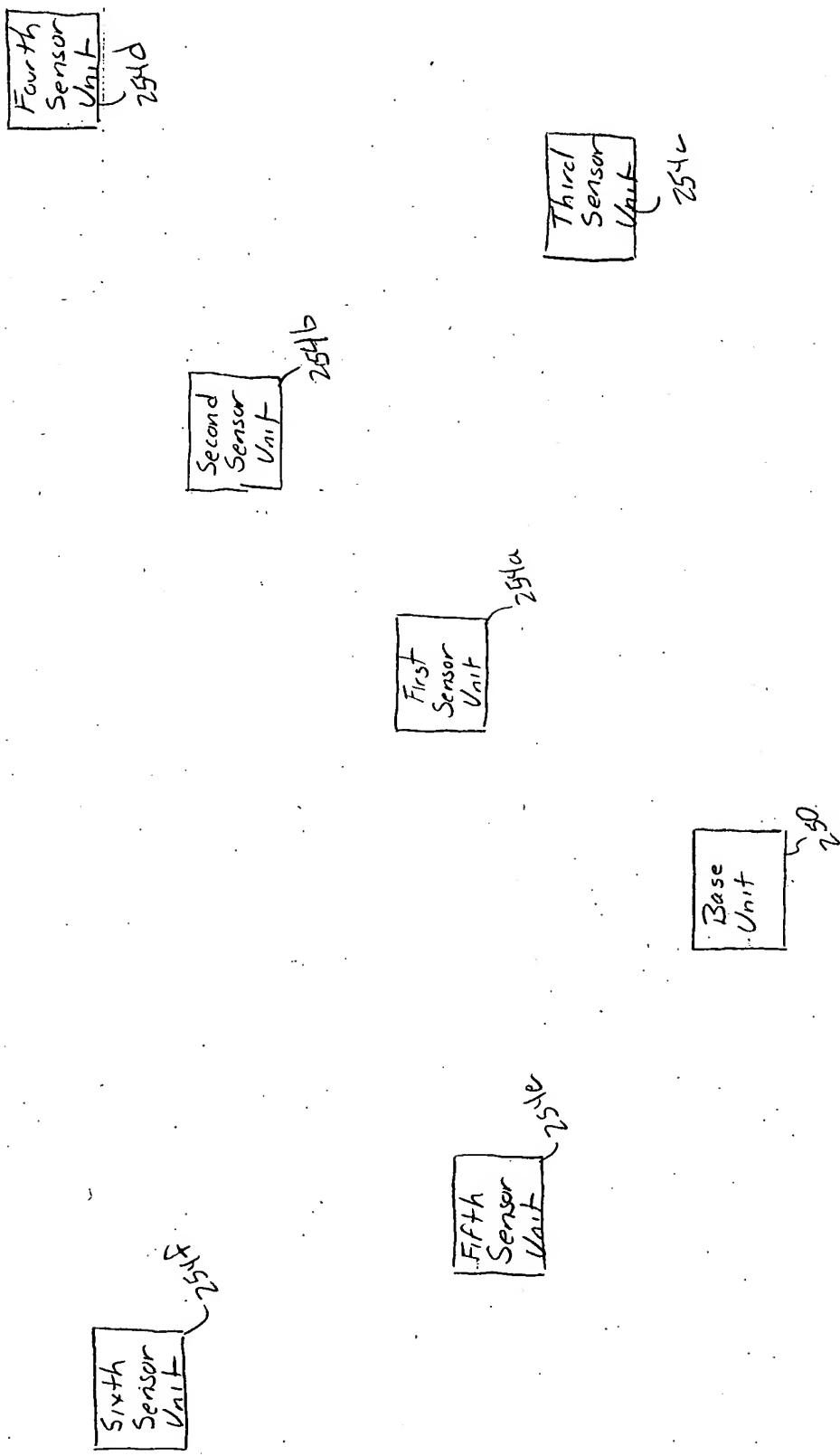
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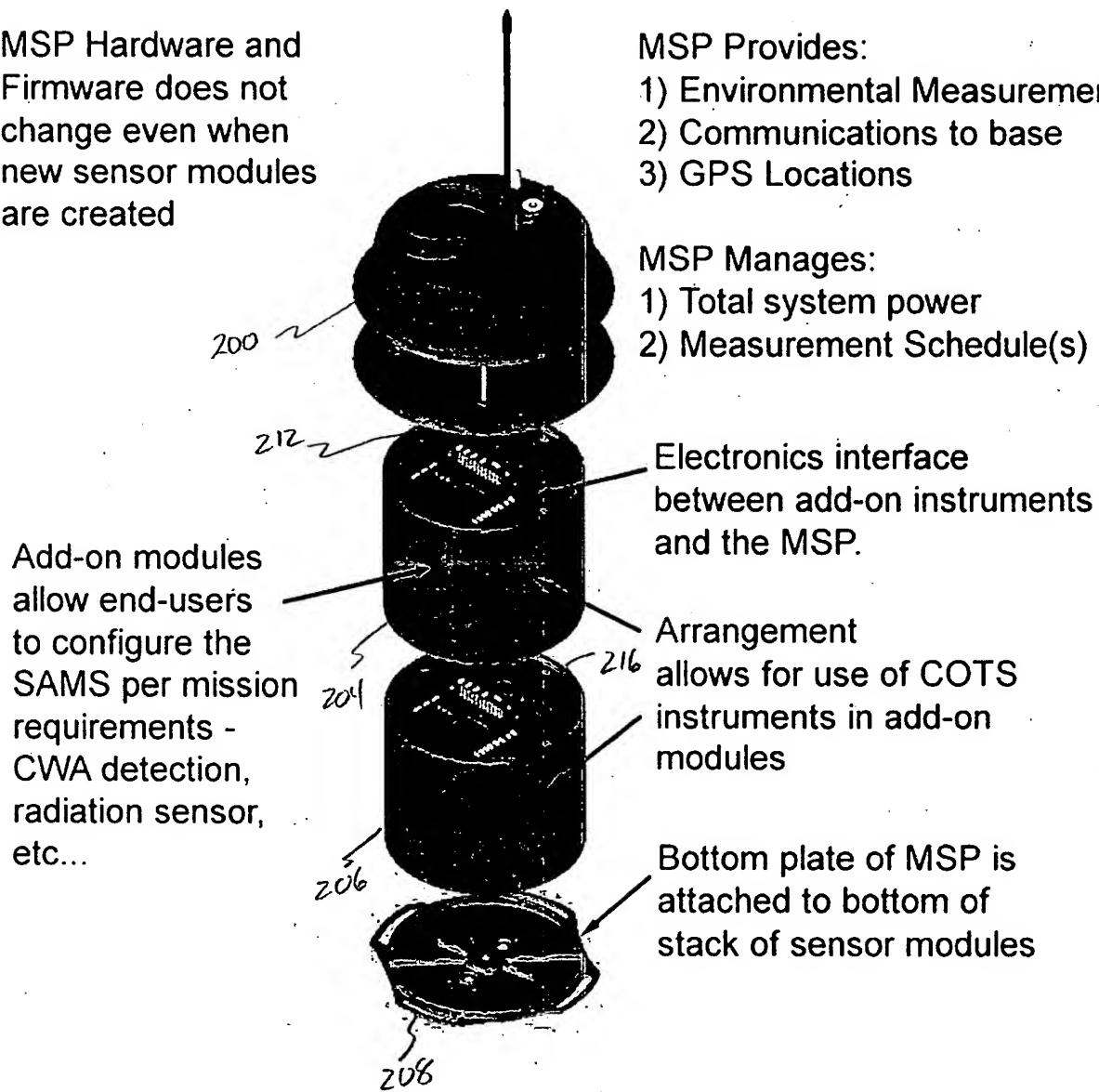


F/G. 1

F16.2



MSP Hardware and Firmware does not change even when new sensor modules are created



MSP Provides:

- 1) Environmental Measurements
- 2) Communications to base
- 3) GPS Locations

MSP Manages:

- 1) Total system power
- 2) Measurement Schedule(s)

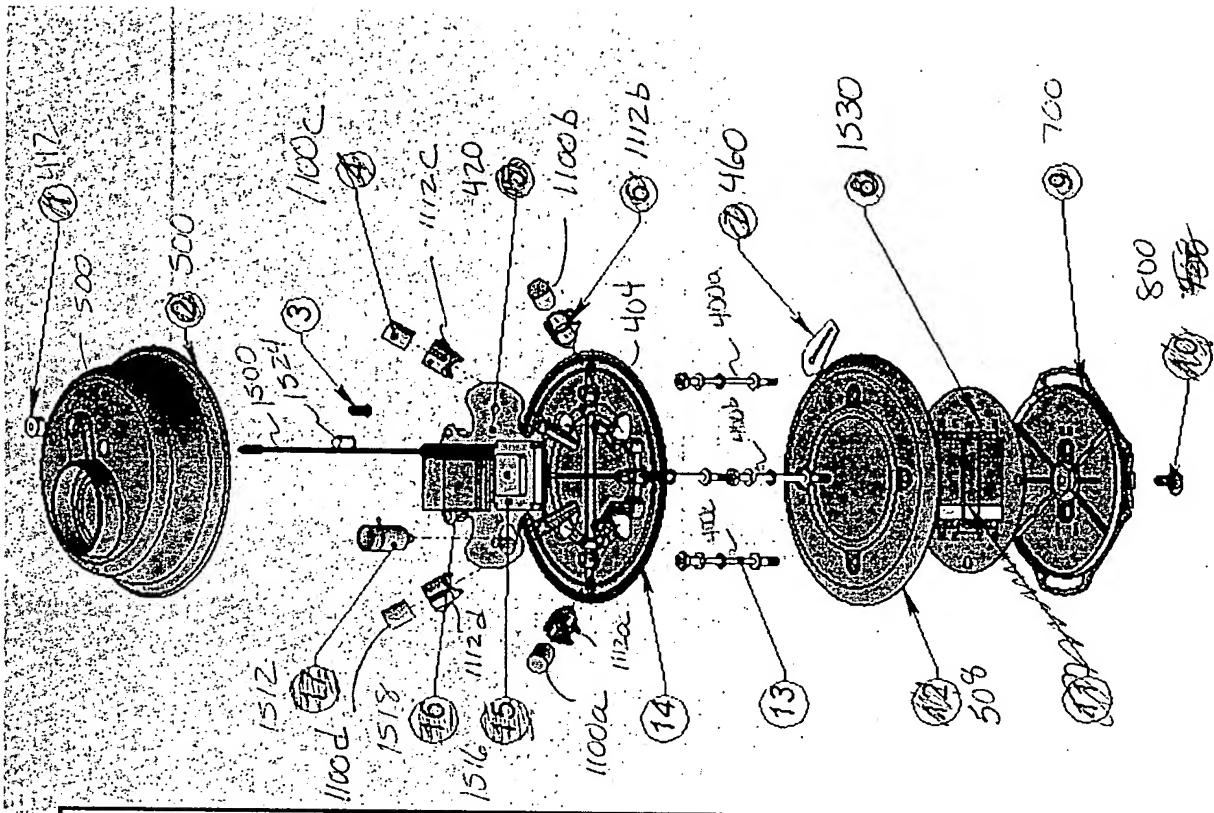
Add-on modules allow end-users to configure the SAMS per mission requirements - CWA detection, radiation sensor, etc...

Electronics interface
between add-on instruments
and the MSP.

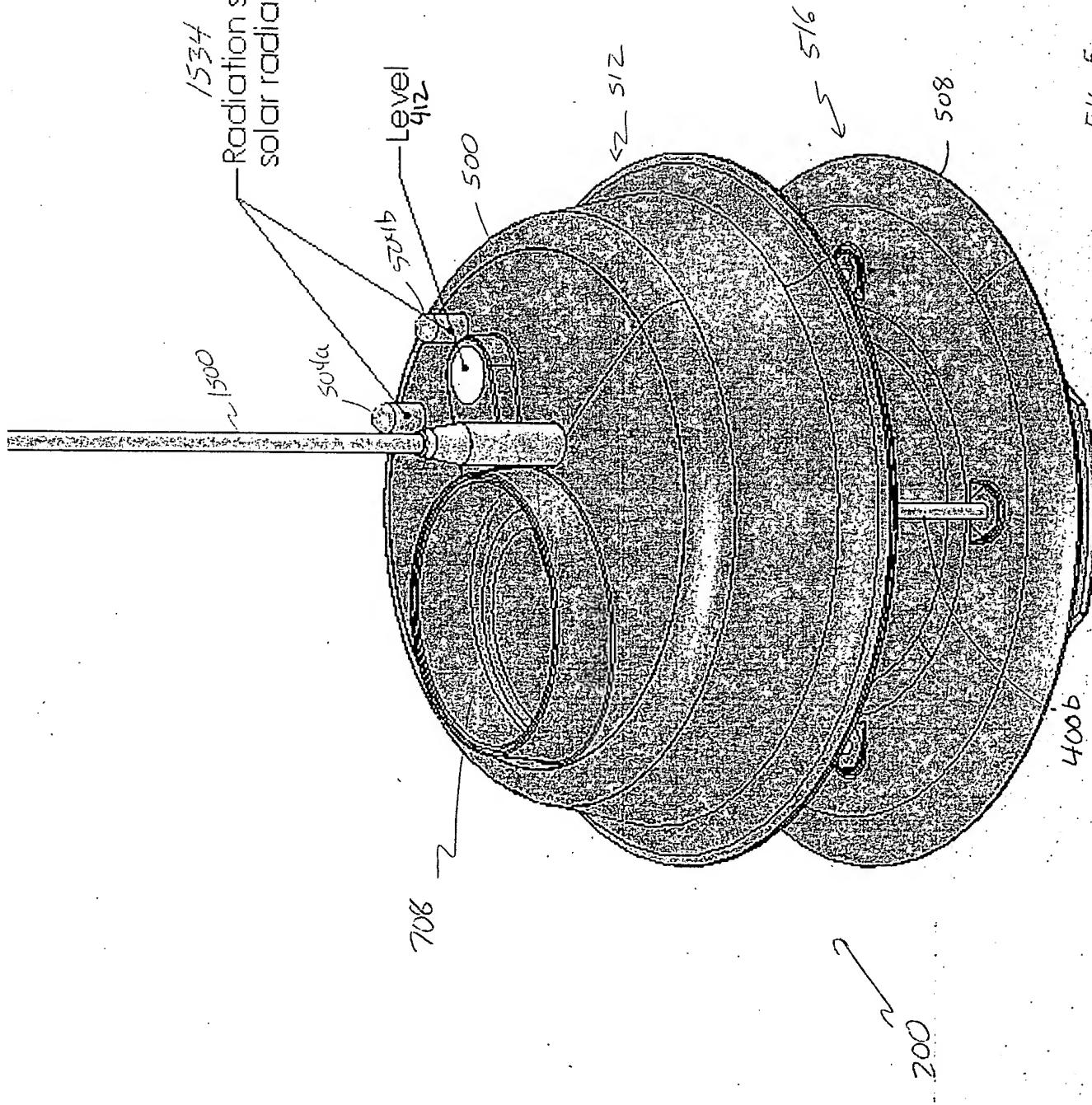
- Arrangement allows for use of COTS instruments in add-on modules

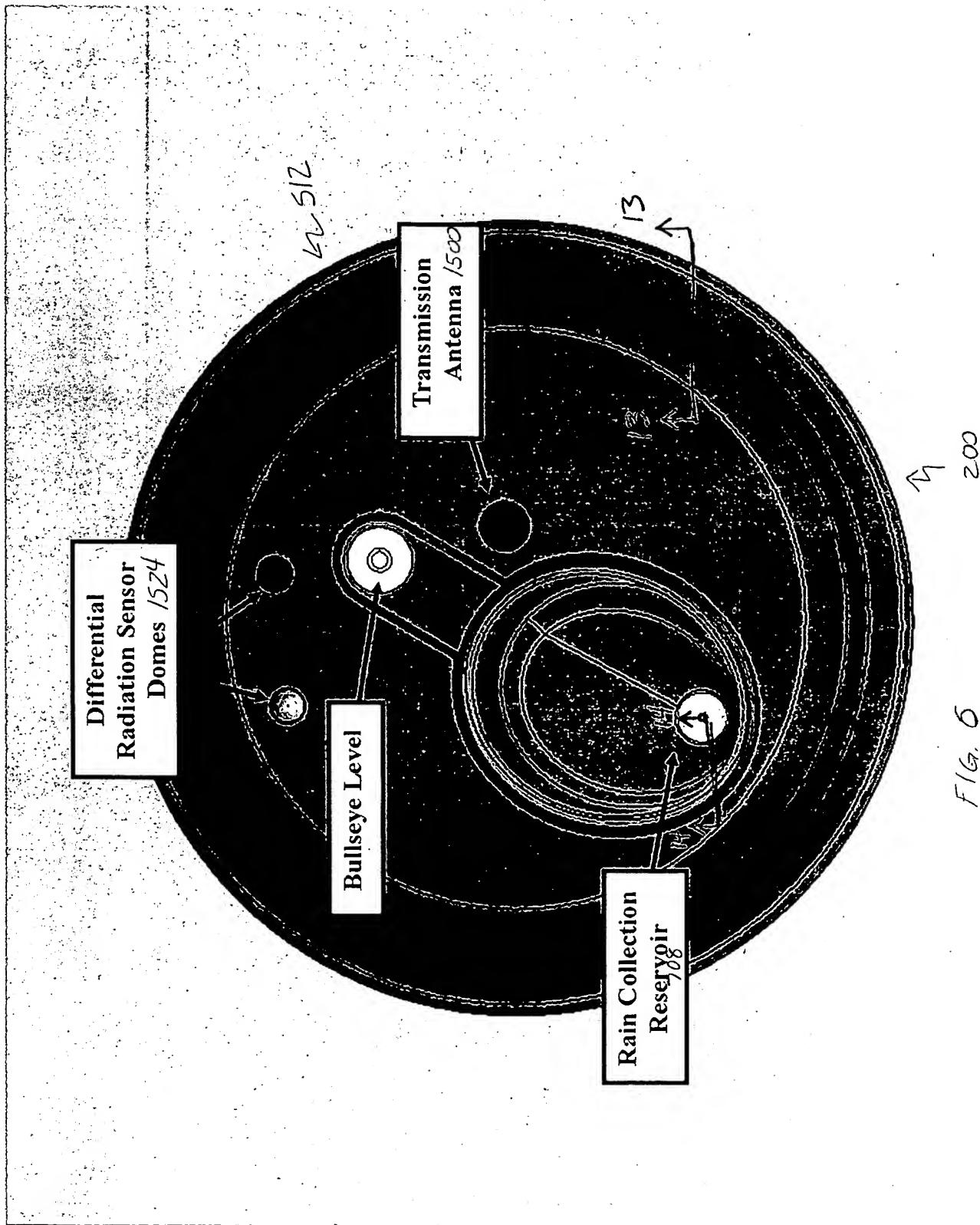
Bottom plate of MSP is attached to bottom of stack of sensor modules

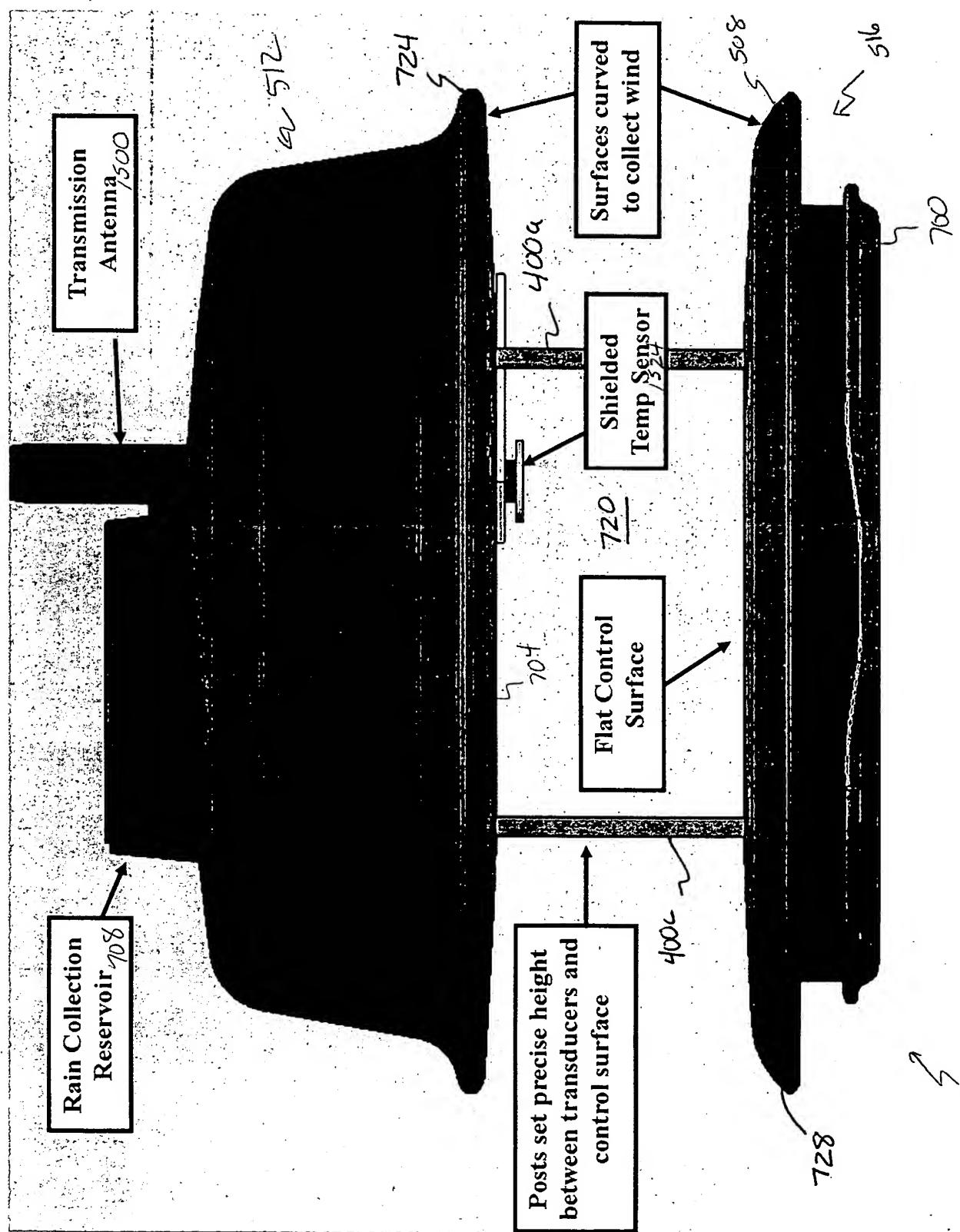
FIG. 3.



- 1—Bull's-eye level
- 2—Top shell
- 3—Incident radiation sensors
- 4—Ultrasonic transducer (x4)
- 5—Circuit board
- 6—Transducer mount
- 7—Shielded temperature sensor
- 8—Battery board
- 9—Bottom cover
- 10—Thumbscrew
- 11—Lithium-ion battery cells
- 12—Bottom wind deflector
- 13—Precision standoff
- 14—Upper wind deflector
- 15—GPS unit
- 16—Radio modem and antenna
- 17—Rain gauge







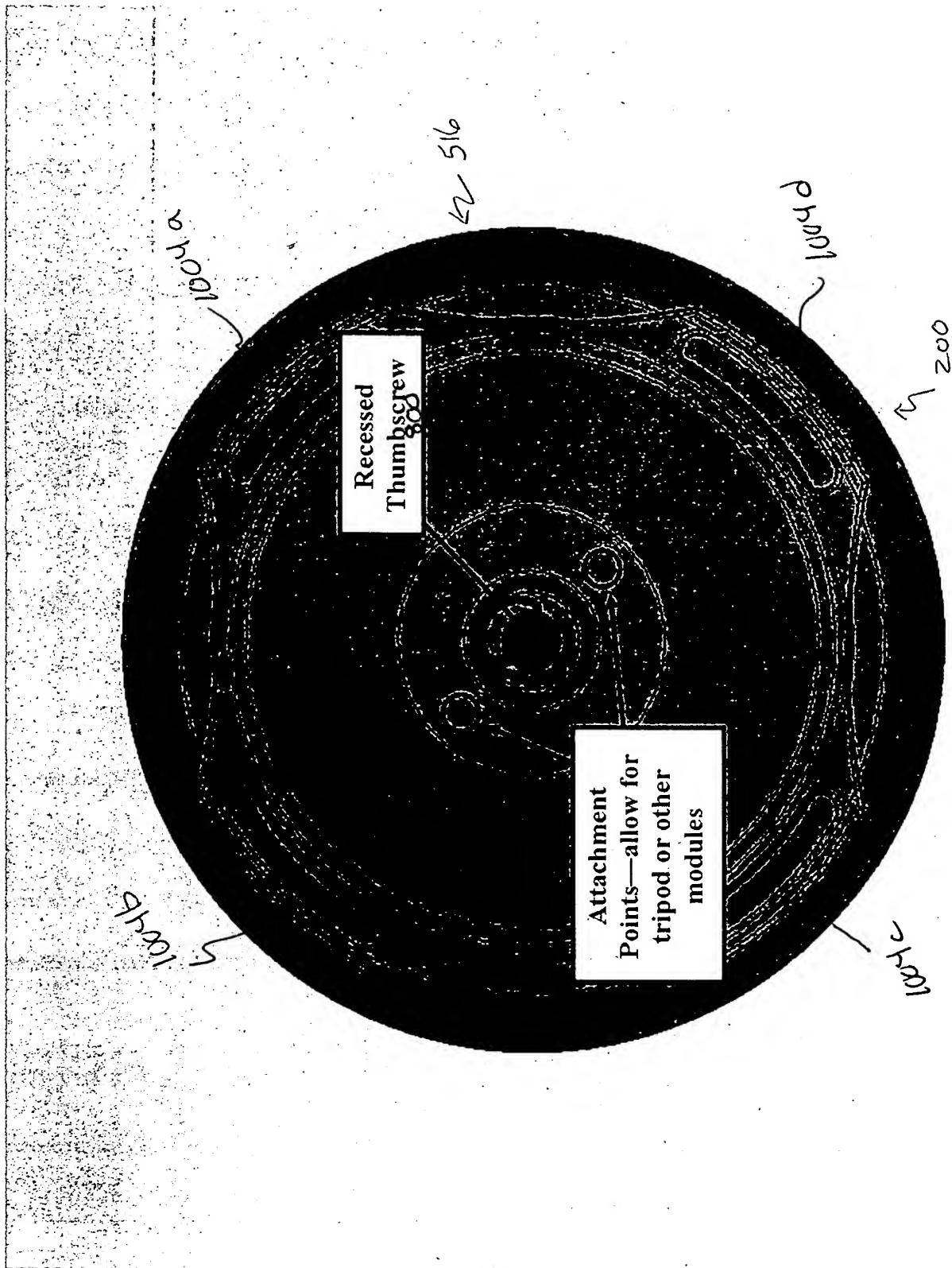


Fig. 8

Communications
port

900

5 1/2

4x AA lithium batteries
1530

5 1/2

904

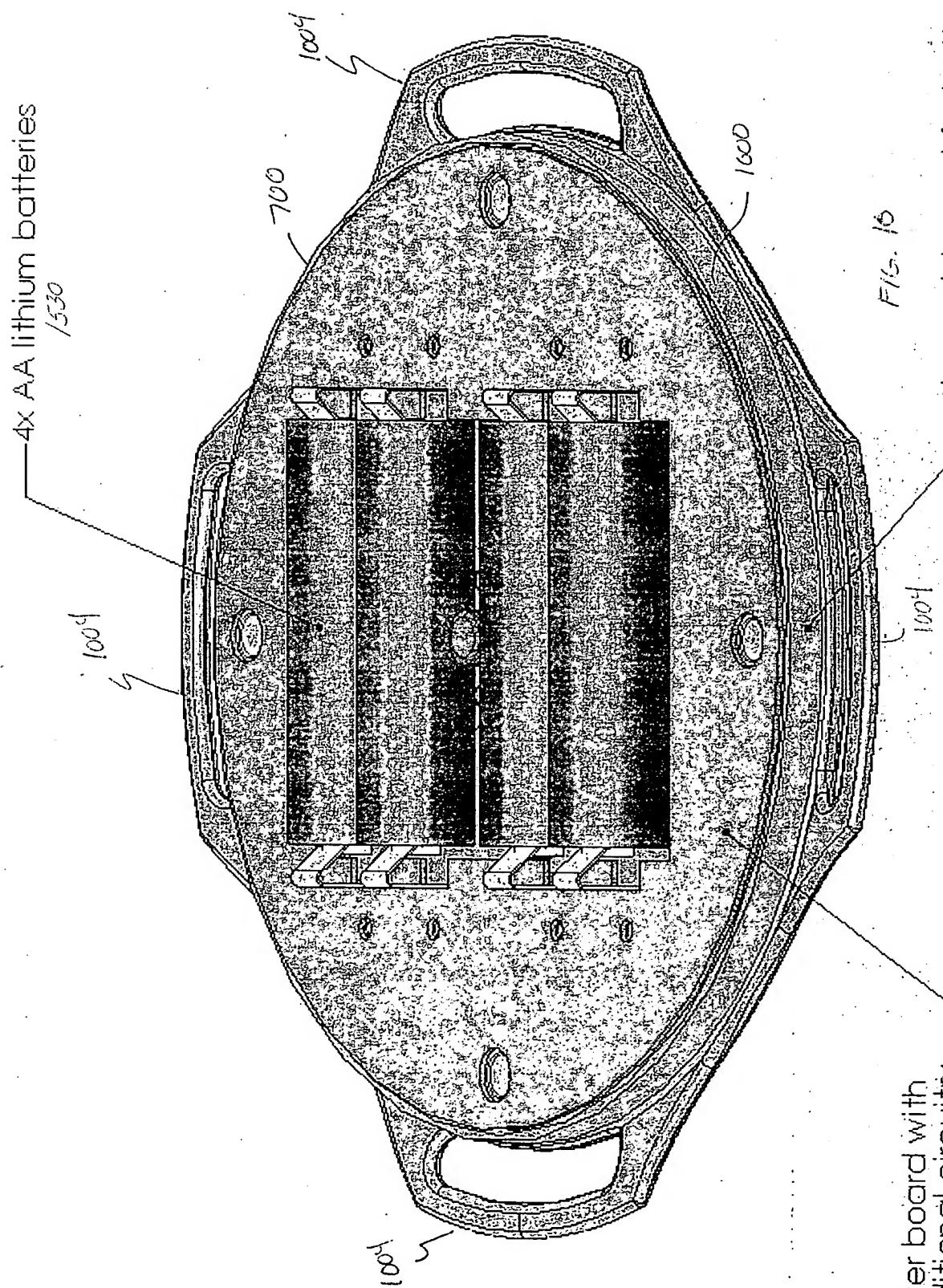
5 1/2

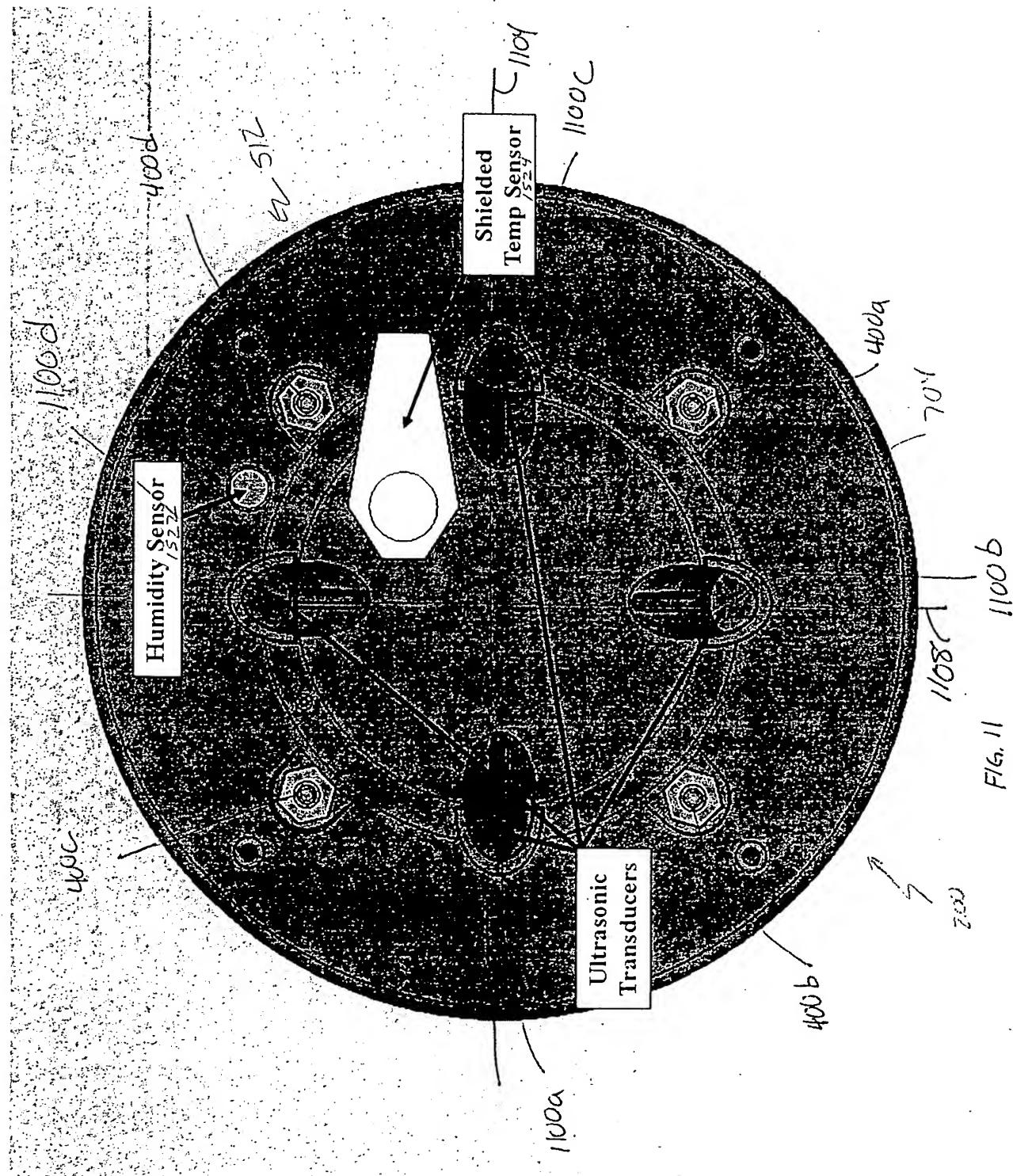
906

Angled lip provides
seal

E4 9

Board with





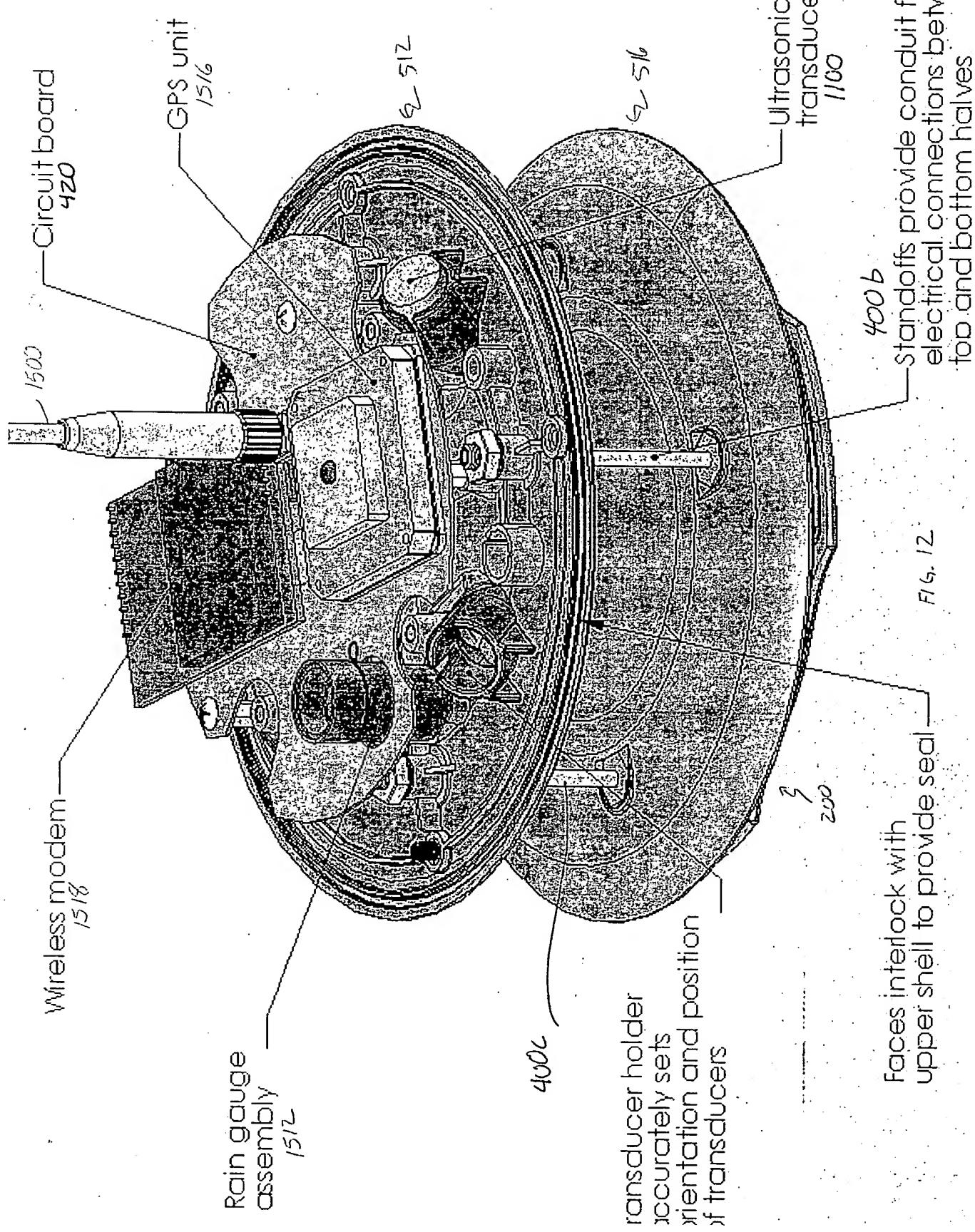


Fig. 12

Standoffs provide conduit for electrical connections between top and bottom halves

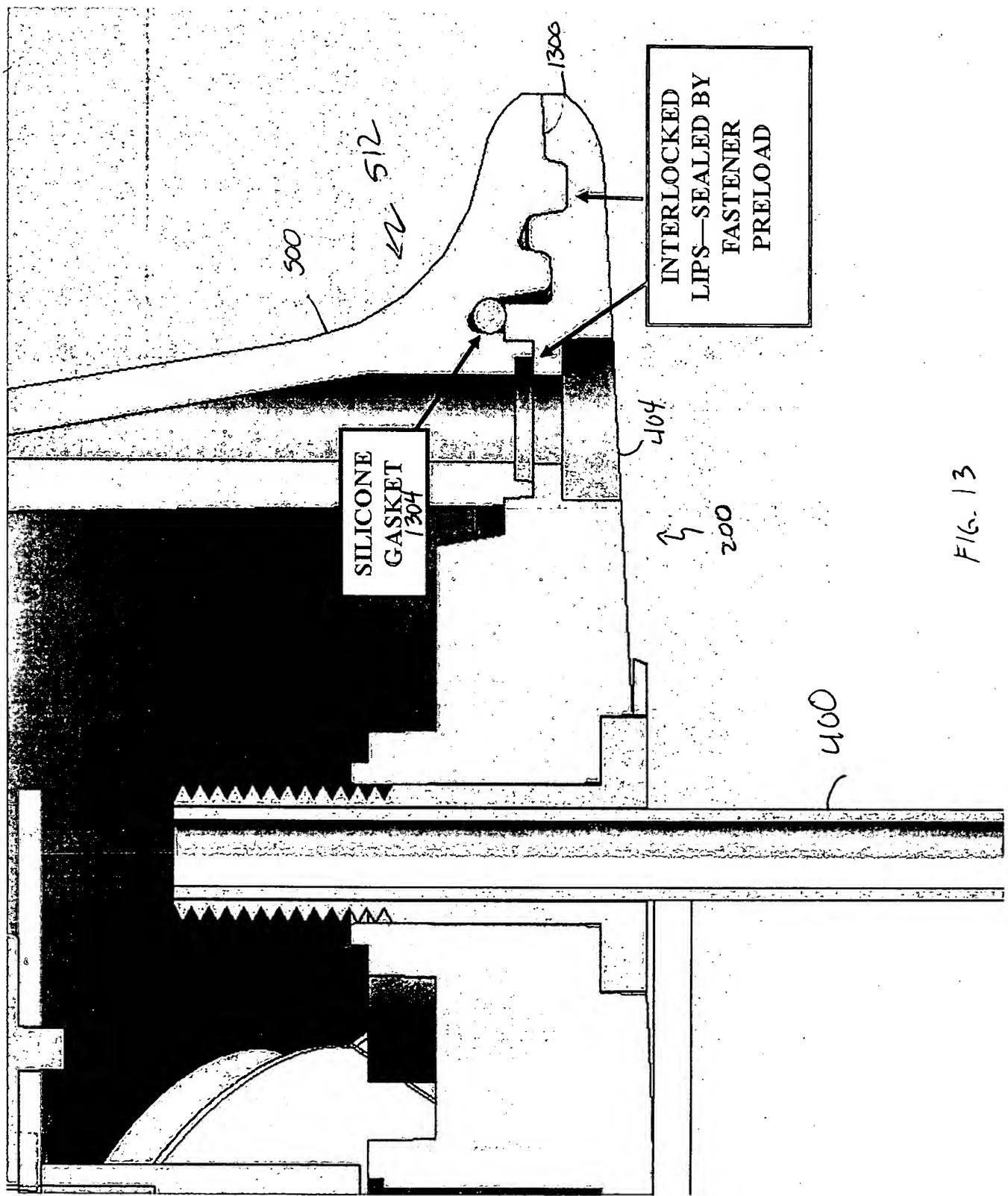
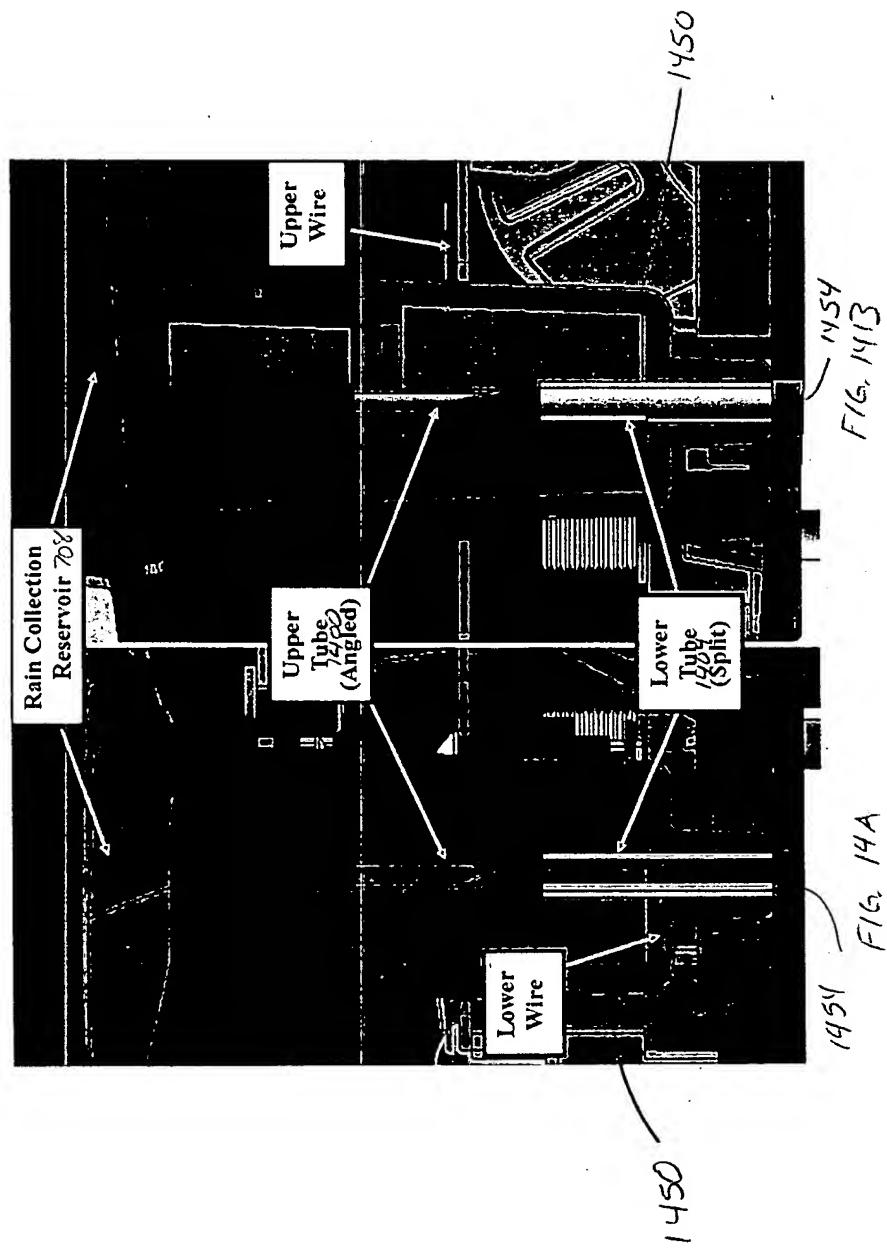
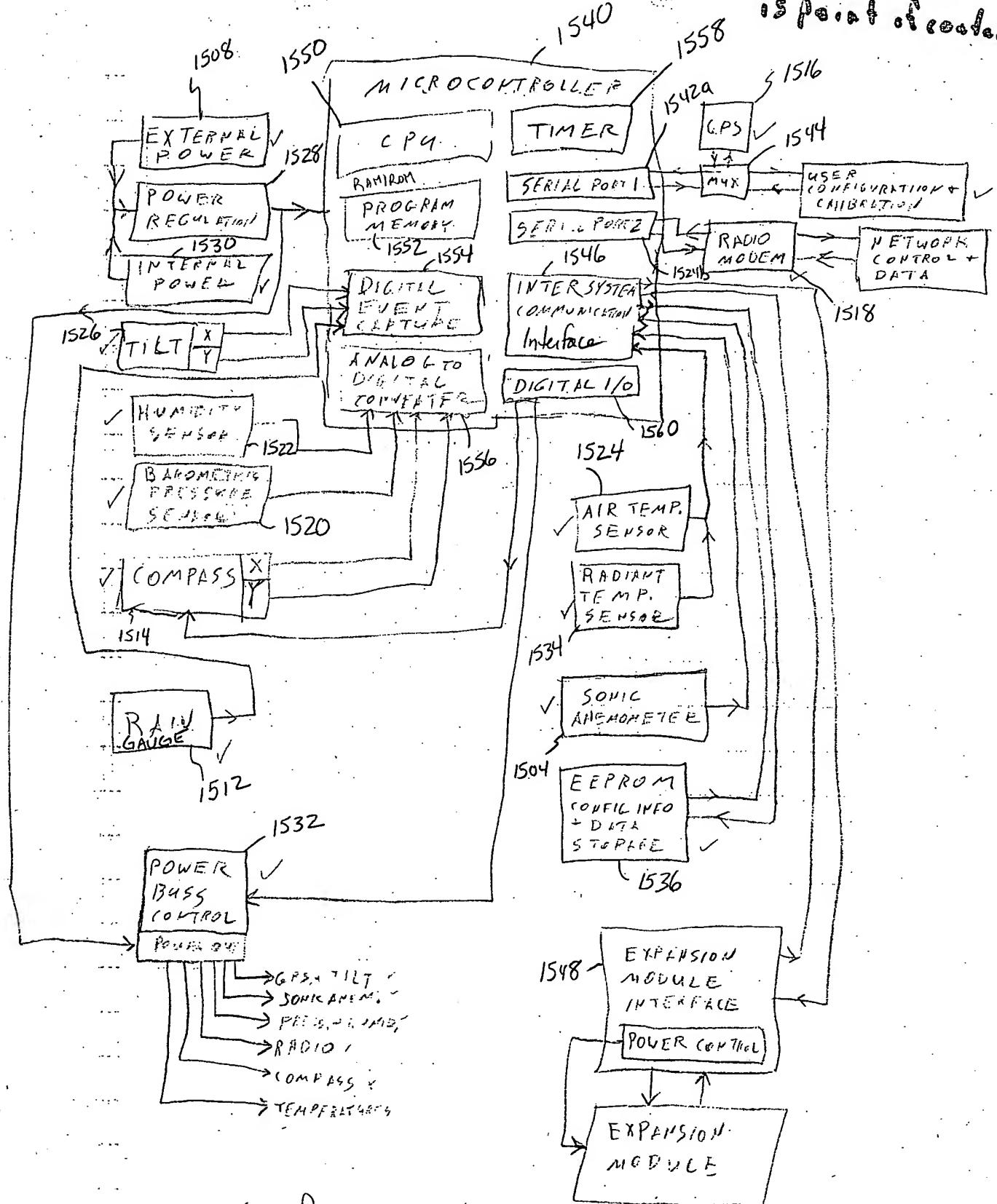


FIG. 13



Electrical flow

Mike O'Connor
is point of contact



→ Paragraph for each item

FIG. 15

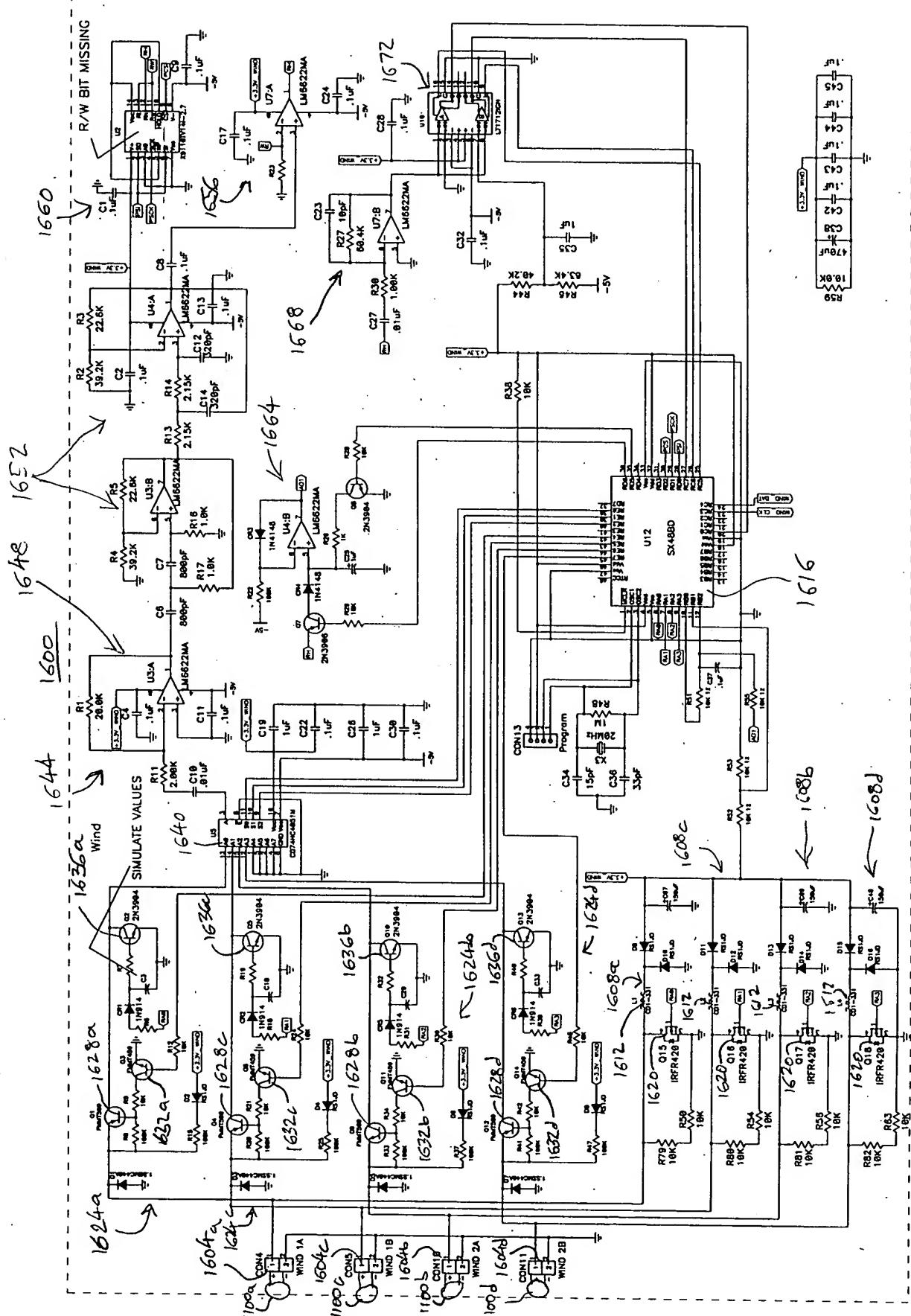
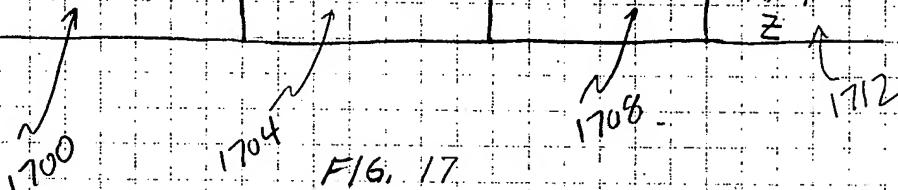


Fig. 16

Sensor Unit	Branch	Next Scheduled Communication	Neighbor List
1	1	1:30 PM	2 3 4
2	I	1:30 PM	1 3 4
3	1	1:30 PM	1 2 4
4	1	1:30 PM	1 2 3
•	•	•	•
N	M	3:00 PM	X Y Z



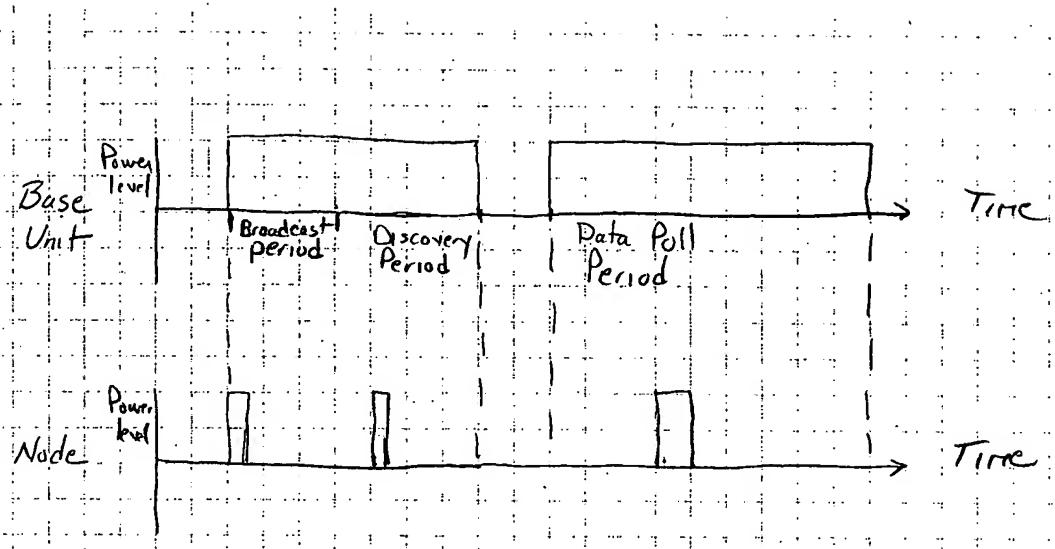


FIG. 18

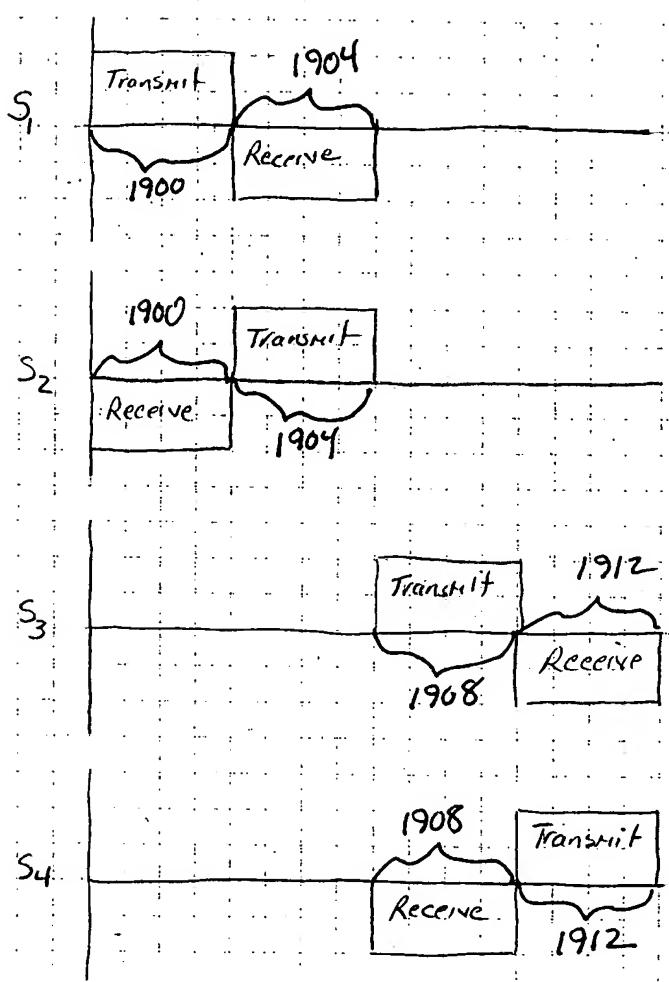


FIG. 19

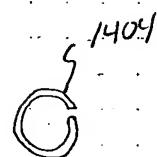


FIG. 20

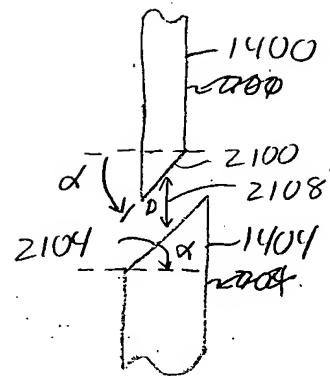


FIG. 21

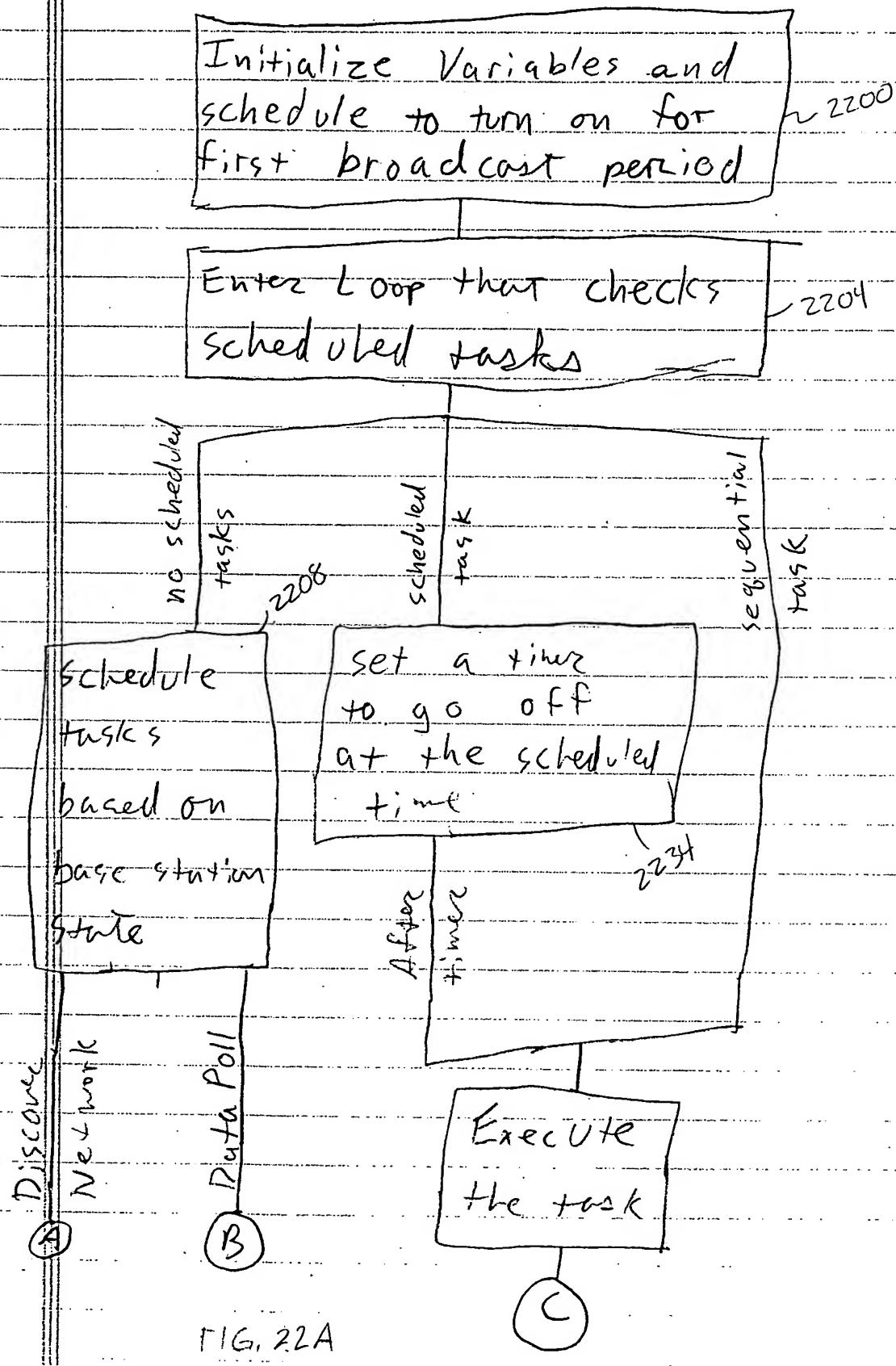


FIG. 22A

(A)

Just Finished Discovering
Network as schedule
Data polls or another
broadcast if network
is empty. Change state

Network
empty
not empty

2210

Network
empty
empty

2216

Schedule each
network branch
to turn on
to report + its
data

Schedule to turn
on and broadcast
at the next broadcast
period

2212
Schedule to collect
data from each
MSP

Return to the loop
Checking the next task

2214
Tell each MSP
its next turn on
time and turn
them off

FIG. 22B

(B)

Just Finished data polling
so change state and
schedule some type of
Discovery

2228

Network
not
in
III

Not
in
III

Schedule
a full
discovery
during the
next broadcast
period

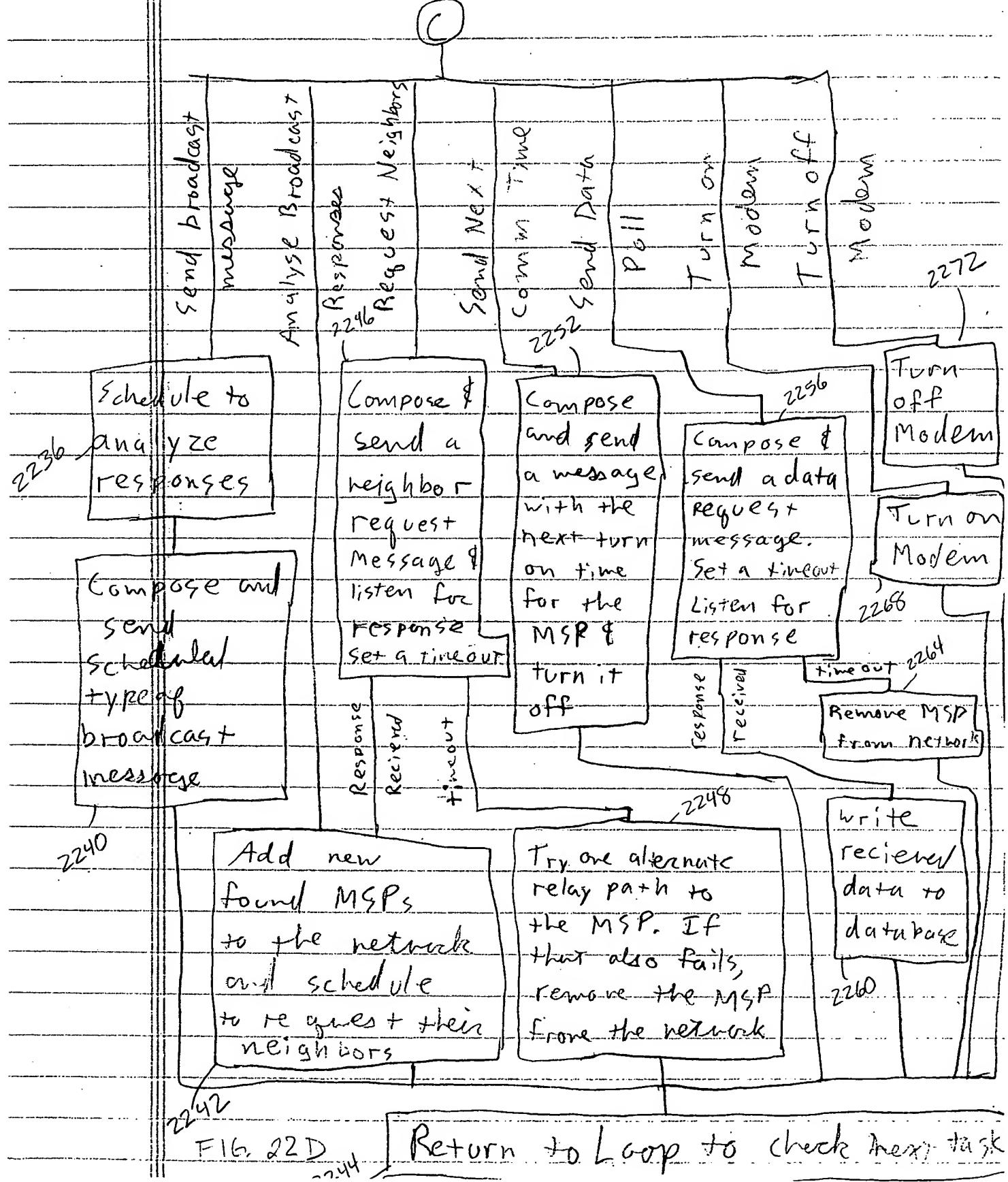
2230

Schedule a
partial discovery.
Only ask one
branch to
broadcast and
only request
their neighbors

2232

Return to the
Loop checking
the next task

FIG. 22C



DASE Station

